
Research Publications in Journals:

- 1.> **Manish Tiwari** and Amit Dhawan, "A Survey on Stability of 2-D Discrete Systems Described by Fornasini-Marchesini Second Model," *Circuits and Systems*, Vol. 3 (1), 2012, pp. 17 – 22. DOI: 10.4236/cs.2012.31003.
- 2.> **Manish Tiwari** and Amit Dhawan, "Robust Suboptimal Guaranteed Cost Control for 2-D Discrete Systems Described by Fornasini-Marchesini First Model," *Journal of Signal and Information Processing*, Vol. 3, 2012, pp. 252 – 258. DOI: 10.4236/jsip.2012.32034.
- 3.> **Manish Tiwari** and Amit Dhawan, "Comment on "Robust Guaranteed Cost Control for a Class of Two-Dimensional Discrete Systems with Shift-Delays"," *Multidimensional Systems and Signal Processing*, Vol. 23 (3), 2012, pp. 415 – 419. DOI: 10.1007/s11045-011-0151-6.
- 4.> **Manish Tiwari** and Amit Dhawan, "An LMI Approach to Optimal Guaranteed Cost Control of Uncertain 2-D Discrete Shift-Delayed Systems via Memory State Feedback," *Circuit Systems and Signal Processing*, Vol. 31 (5), 2012, pp. 1745 – 1764. DOI: 10.1007/s00034-012-9410-5.
- 5.> Amit Kumar Pandey, Jayant Kumar Tiwari, Ram Awadh Mishra, Rajendra Kumar Nagaria, **Manish Tiwari**, "Design of New Low Leakage Power Domino XOR Circuit," *International Journal of Computer Applications*, Vol. 65, 2013, pp. 0975 – 8887. DOI: 10.5120/10890-5787.
- 6.> **Manish Tiwari** and Amit Dhawan, "Optimal Guaranteed Cost Control of Uncertain 2-D Discrete Systems with Both Shift-Delays and Input Delays via Memory State Feedback", *Transactions of the Institute of Measurement and Control*, Vol. 35 (4), 2013, pp. 491 – 402. DOI: 10.1177/0142331212453375.
- 7.> Abhay Vidyarthi and **Manish Tiwari**, "LMI Approach to Guaranteed Cost Control for Uncertain 2-D Discrete Shift Delayed Systems described by the General Model," *HCTL Open International Journal of Technology Innovations and Research (IJTIR)*, Vol. 18 (1), 2016, pp. 1 – 15. DOI: 10.5281/zenodo.161066.
- 8.> Prabhat Chandra Srivastava, Prashant Kumar and **Manish Tiwari**, "Hardware Realization of 2-D General Model State Space Systems," *International Journal of Engineering and Technology (IJET)*, Vol. 9 (5), 2017, pp. 3659 – 3668, DOI: 10.21817/ijet/2017/v9i5/170905301.
- 9.> Abhay Vidyarthi, **Manish Tiwari** and Amit Dhawan, "Robust Optimal H-Inf Control for 2-D Discrete Systems Using Asymmetric Lyapunov Matrix," *Circuit Systems and Signal Processing*, Vol. 36 (10), 2017, pp. 3901 – 3918, DOI: 10.1007/s00034-017-0495-8.
- 10.> Prashant Kumar, Prabhat Chandra Shrivastava, **Manish Tiwari** and Amit Dhawan, "ASIC Implementation of Area Efficient, High Throughput 2-D IIR filter using Distributive Arithmetic," *Circuit Systems and Signal Processing*, Vol. 37 (7), 2018, pp. 2934 – 2957, DOI: 10.1007/s00034-017-0698-z.
- 11.> Akshata Tandon, Amit Dhawan and **Manish Tiwari**, "Optimal Guaranteed Cost Control of 2-D Discrete State-Delayed Systems Described by the Roesser Model via Memory State Feed Back," *Transactions of the Institute of Measurement and Control*, Vol. 41 (1), 2019, pp. 285 – 294, DOI: 10.1177/0142331218754623.
- 12.> Prashant Kumar, Prabhat Chandra Shrivastava, **Manish Tiwari** and Ganga Ram Mishra, "High Throughput, Area-Efficient Architecture of 2-D Block FIR Filter Using Distributive Arithmetic Algorithm," *Circuit Systems and Signal Processing*, Vol. 38 (3), 2019, pp. 1099 – 1113, DOI: 10.1007/s00034-018-0897-2.

- 13.> Prabhat Chandra Shrivastava, Prashant Kumar, **Manish Tiwari** and Amit Dhawan, "Efficient Architecture for the Realization of 2-D Adaptive FIR Filters Using Distributive Arithmetic," *Circuit Systems and Signal Processing*, Vol. 40, March 2021, pp. 1458 – 1478, DOI: 10.1007/s00034-020-01539-y.
- 14.> Prabhat Chandra Shrivastava, Prashant Kumar, **Manish Tiwari** and Amit Dhawan, "An Efficient Block-Based Architecture for Reconfigurable FIR Filter Using Partial-Product Method," *Circuit Systems and Signal Processing*, Vol. 41, Nov 2022, pp. 2173 – 2187, DOI:10.1007/s00034-021-01881-9.
- 15.> Abhimanyu Yadav, **Manish Tiwari** and Anand Sharma, "Dual-Band Quasi-Isotropic Dielectric Resonator-Based Filtering Antenna for IoT Applications," *Journal of Electronic Materials*, Vol. 52(2), pp. 1590-1598, article 1590, February 2023, DOI:10.1007/s11664-022-10133-8.
- 16.> Shashi Kant Sharma, Sumit Kumar Jha, Amit Dhawan and **Manish Tiwari**, "Q-learning based Adaptive Optimal Control for Linear Quadratic Tracking Problem," *International Journal of Control, Automation and Systems (IJCAS)*, Vol. 21(8), pp. 2718-2725, Aug-2023, DOI:10.1007/s12555-022-0364-5.
- 17.> Raghuvendra Pratap Tripathi, **Manish Tiwari**, Amit Dhawan, Sumit Kumar Jha, Arun Kumar Singh, "Efficient Multiplier-less Perceptron Architecture for Realization of Multi-Layer Perceptron Inference Models," *Circuits, Systems, and Signal Processing*. Vol. 42(8), pp. 1-32, March 2023, DOI: 10.1007/s00034-023-02318-1.
- 18.> Nilesh Kumar Yadav, Amit Dhawan, **Manish Tiwari** and Sumit Kumar Jha, "Modified Model of RLS Adaptive Filter for Noise Cancellation," *Circuit Systems and Signal Processing*, 43:3238–3260, DOI: <https://doi.org/10.1007/s00034-024-02605-5>.
- 19.> Abhimanyu Yadav, Deepak Sigroha, **Manish Tiwari** & Anand Sharma. (2024). "Quad-Port MIMO dielectric Resonator Antenna with filtering response for IoT application," *Electromagnetics*, Vol. 44(1), pp. 32-45, January 2024, DOI: 10.1080/02726343.2024.2305925.
- 20.> Sonelal Prajapati, Sanjeev Rai, **Manish Tiwari**, and Atul Kumar Dwivedi, "Minimized Group Delay FIR Low Pass Filter Design Using Modified Differential Search Algorithm," *Journal of Telecommunications and Information Technology (JTIT)*, Vol. 3(3), pp. 78–84, September 2023, DOI: 10.26636/jtit.2023.3.1313.
- 21.> Raghuvendra Pratap Tripathi, Virat Krishna, **Manish Tiwari**, Gaurav Trivedi, Amit Dhawan, Prashant Kumar, "Low complexity, high throughput, energy efficient, pipelined and reconfigurable ASIC realization architecture for multi-layer perceptron models," *Neurocomputing*, Vol. 598, 14 September 2024, pp. 1-14, 128013, ISSN No:0925-2312, DOI: 10.1016/j.neucom.2024.128013.
- 22.> Abhimanyu Yadav, Nagesh Kallollu Narayanaswamy, **Manish Tiwari** & Anand Sharma, "Two-Port Metasurface-Loaded Circularly Polarized Al₂O₃ Ceramic-Based Filtering Antenna for 2.5/2.6 GHz Band," *Journals of Electronics Material*, Vol. 2023 (12), pp. 8141–8150, September 2023, DOI:10.1007/s11664-023-10734-x.
- 23.> Akhilesh Kumar Ravat, Amit Dhawan, **Manish Tiwari** and Sumit Kumar Jha, "A Brief Survey on Preview Control for Discrete-time Systems," *High Technology letters*, Vol.34(4), April 2024, pp. 141-150, DOI: 10.37896/HTL30.4/10513.
- 24.> Akhilesh Kumar Ravat, Amit Dhawan, **Manish Tiwari** and Sumit Kumar Jha, "Feasibility and stability of preview control for 2-D discrete-time systems described by the Roesser model," *International Journal of Advanced Technology and Engineering Exploration*, Vol. 10(107), Oct 2023, pp. 1293-1315, DOI:10.19101/IJATEE.2023.10101035.
- 25.> Akhilesh Kumar Ravat, Amit Dhawan, **Manish Tiwari** and Sumit Kumar Jha, "Stability and Preview Control for 2-D Discrete Uncertain Systems described by the Roesser model," *Journal of Systems Engineering and Electronics*, ISSN NO: 1671-1793, Vol. 34(7), 2024, pp. 571-594, DOI: 20.14118.jsee.2024.V34I7.1841.

- 26.> Sonelal Prajapati, Prashant Kumar, Sanjeev Rai and **Manish Tiwari**," Designing of Digital FIR Filter by Optimizing Group Delay Using Reptile Search Algorithm," *High Technology Letters*, Vol. 30(1), pp. 507 – 515, Jan 2024, ISSN NO: 1006-6748. DOI: 10.37896/HTL30.1/99892.
- 27.> Nilesh Kumar Yadav, Amit Dhawan, **Manish Tiwari**, and Sumit Kumar Jha, "A state-of-the-art survey on noise removal in a non-stationary signal using adaptive finite impulse response filtering: challenges, techniques, and applications," *International Journal of Systems Science* (2024): 56: 885-918. DOI: 10.1080/00207721.2024.2409850.
- 28.> Nilesh Kumar Yadav, Amit Dhawan, **Manish Tiwari**, and Sumit Kumar Jha," Multistage Cascaded LMS Adaptive FIR Filter and its Application to Multiple Artifacts Removal from ECG," *IETE Journal of Research* (2025): 1–18. DOI: 10.1080/03772063.2025.2483934.
- 29.> Hari Om Shanker Mishra, Sumit Kumar Jha, Amit Dhawan & **Manish Tiwari**," An adaptive linear quadratic tracker design for continuous – time systems with completely unknown dynamics," *International Journal of Systems Science* (2025): 1-22. DOI: 10.1080/00207721.2025.2503205.
- 30.> Sanjiv Kumar Gupta, Amit Dhawan, **Manish Tiwari** & Sumit Kumar Jha, "Low-Power Approximate Adder Design for Image Processing and K-Medians Clustering Applications," *IETE Journal of Research* (03 Dec 2025), DOI: 10.1080/03772063.2025.2592681.
- 31.> Sanjiv Kumar Gupta, Amit Dhawan, **Manish Tiwari** & Sumit Kumar Jha, "Design and Performance Analysis of an 8-3 Approximate Compressor-Based Multiplier for Image Blending Application," *IETE Journal of Research*, (2025), 71(7), 2441–2452. DOI: doi.org/10.1080/03772063.2025.2487625.

Research Publications Seminar/Conferences:

- 1.> A.K. Singh and **Manish Tiwari**, "ATM: A Definite Edge Technology," *National conference on Broadband Integrated Digital System and Networks (B-ISDN 2005)*, held at NIEC Delhi, Mar' 2005.
- 2.> A.K. Singh and **Manish Tiwari**, "ATM: Congestion Control & Avoidance," *International conference on Wireless Communication & Sensor Network (WCSN 2005)*, held at IIIT Allahabad, Mar' 2005.
- 3.> Rafik Ahmad and **Manish Tiwari**, "OFDM PAPR Reduction Techniques for Wireless Applications: A Survey," *National Seminar on Mobile Communication & VLSI Design*, held at Shambhunath Institute of Engineering & Technology, Allahabad, Jan' 2010.
- 4.> Rafik Ahmad and **Manish Tiwari**, "Performance Analysis of Phase Modulated Constant Envelope OFDM-PM in AWGN Channel," *National Conference on Advancement & Future Trends in VLSI Design & Embedded System*, held at Gyan Ganga Institute of Technology & Science, Jabalpur, Feb' 2010.
- 5.> **Manish Tiwari** and Amit Dhawan, "A Survey on Stability of 2-D Discrete Systems Described by Fornasini-Marchesini First Model," *International Conference on Power Control & Embedded Systems (ICPCES 2010)*, held at MNNIT Allahabad, Dec' 2010.
- 6.> Rafik Ahmad and **Manish Tiwari**, "Spectral Containment and Performance Comparison of Constant Envelope OFDM-PM and Standard OFDM," *International Symposium on Computer Engineering & Technology (ISCET 2010)*, held at RIMT – Institute of Engineering & Technology Mandi Gobindgarh, Punjab, Mar' 2010.
- 7.> Amrita Tiwari, Prashant Kumar and **Manish Tiwari**, "High Throughput Adaptive Block FIR Filter using Distributed Arithmetic," *India International Conference on Information processing (IICIP 2016, IEEE Conference Record:37817)*, held at DTU Delhi, 2016, pp. 1 – 6, 1st – 2nd Jan 2016. DOI: 10.1109/IICIP.2016.7975385.

- 8.> Prabhat Chandra Shrivastava, Prashant Kumar, **Manish Tiwari**, Amit Dhawan, "A Novel Approach for Low Voltage, Low Power Deep Sub-Threshold 5-T SRAM Cell," in Proceeding of the International Conference on Emerging Trends in Computing and Communication Technologies (ICETCCT-2017, IEEE Conference Record:42896), held at Graphic Era Hill University, Dehradun, 17th - 18th Nov 2017. DOI: 10.1109/ICETCCT.2017.8280326.
- 9.> Vaibhav Varshney, **Manish Tiwari**, "Realization of an FIR Filter using ATMEGA32 Microcontroller," in Proceeding of the International Conference on Emerging Trends in Computing and Communication Technologies (ICETCCT-2017, IEEE Conference Record:42896), held at Graphic Era Hill University, Dehradun, 17th - 18th Nov 2017. DOI: 10.1109/ICETCCT.2017.8280325.
- 10.> Prabhat Chandra Shrivastava, Prashant Kumar, **Manish Tiwari**, Amit Dhawan, "A Survey on the Hardware Realization of 2-D State Space Filtering," in Proceeding of the International Conference on Emerging Trends in Computing and Communication Technologies (ICETCCT-2017, IEEE Conference Record:42896), held at Graphic Era Hill University, Dehradun, 17th - 18th Nov 2017. DOI: 10.1109/ICETCCT.2017.8280335.
- 11.> Prashant Kumar, Prabhat Chandra Shrivastava, **Manish Tiwari**, Amit Dhawan, "Realization of Efficient Architecture for Digital Filters: A Survey," in Proceeding of the International Conference on VLSI Communication and Signal Processing (VCAS-2018), MNNIT Allahabad, 29th Nov - 01st Dec 2018. DOI: 10.1007/978-981-32-9775-3_78.
- 12.> Abhay Vidyarthi, **Manish Tiwari**, "A Survey on H ∞ Control Techniques," in Proceeding of the International Conference on VLSI Communication and Signal Processing (VCAS-2018), held at MNNIT Allahabad, 29 Nov-01 Dec 2018. DOI: 10.1007/978-981-32-9775-3_72
- 13.> Prabhat Chandra Shrivastava, Prashant Kumar, **Manish Tiwari**, Amit Dhawan, "A brief Survey on Hardware Realization of Two-Dimensional Adaptive Filters," in Proceeding of the International Conference on VLSI Communication and Signal Processing (VCAS-2018), held at MNNIT Allahabad, 29th Nov- 01st Dec 2018. DOI: 10.1201/9781003606635-72.
- 14.> Sanjiv Kumar Gupta, Amit Dhawan, **Manish Tiwari**, "Design of 15-4 Compressor for DSP Applications," in Proceeding of the 3rd International Conference on VLSI Communication and Signal Processing (VCAS-2020), held at MNNIT Allahabad, 09 - 11, Oct' 2020. DOI: 10.1201/9781003606635-72.
- 15.> Raghuvendra Pratap Tripathi, **Manish Tiwari**, Amit Dhawan, Anand Sharma, Sumit Kumar Jha, "A Survey on Efficient Realization of Activation Functions of Artificial Neural Network," in Proceeding of the International Conference 2021 Asian Conference on Innovation in Technology (IEEE ASIANCON 2021), held at PCCOER, Pune, 28th - 29th August' 2021. DOI: 10.1109/ASIANCON51346.2021.9544754.
- 16.> A. K. Ravat, Amit Dhawan, **Manish Tiwari**, "LMI and YALMIP: Modelling and Optimization Toolbox in MATLAB," Advances in VLSI, Communication and Signal Processing, Lecture Notes in Electrical Engineering (Springer), Vol. 683, pp. 507-515, 24th -26th Sep 2021. DOI: 10.1007/978-981-15-6840-4_41.
- 17.> Preeti Shukla, **Manish Tiwari**, Mohanasundaram & P. Haribabu, "Design and Implementation of Matched Filtering and Timing Recovery Algorithm for IEEE 802.15.4 Digital Baseband Front End," in proceeding of International Conference on VLSI, Communication and Signal Processing (VCAS 2022), Lecture Notes in Electrical Engineering, vol 1024. Springer, Singapore, 14th - 16th October 2022. DOI: 10.1007/978-981-99-0973-5_32.
- 18.> Hari Om Shankar Mishra, Sumit Kumar Jha, Amit Dhawan and **Manish Tiwari**, "A Survey on Reinforcement Learning based Adaptive Optimal Control Design," in Proceeding of 8th International Conference on Signal Processing and Communication (ICSC), held at *JIIT Noida*, 01st - 03rd December' 2022. DOI: 10.1109/ICSC56524.2022.10009252.

- 19.> Hari Om Shankar Mishra, Sumit Kumar Jha, Amit Dhawan and **Manish Tiwari**, "Comparison of Different-Image Fusion Techniques in Wavelet Domain," in proceeding of IEEE 9th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON), held at Prayagraj, 02nd – 04th December' 2022. DOI: 10.1109/UPCON56432.2022.9986490.
- 20.> Sanjiv Kumar Gupta, Nilesh Yadav, Amit Dhawan, **Manish Tiwari**, and Sumit Kumar Jha "Efficient Approximate Vedic Multiplier: Design, Analysis, and Application in Image Blending," in proceeding of 2nd International Conference on Computer Vision and Machine Intelligence (CVMI-2023), held at IIITM Gwalior, India, 10th – 11th Dec 2023. DOI: 10.1109/CVMI59935.2023.10464551.
- 21.> A. K. Sharma, Sumit Kumar Jha, Hari Om Shankar Mishra, Amit Dhawan and **Manish Tiwari**, "Modified March C- Algorithm by Complement Symmetricity Approach and Proposed Hardware," in 8th International Conference on Intelligent Technologies (ICIT – 2023) & in proceeding of 8th International Conference on New Paradigms in Social Sciences, Humanities and Culture (NPSHC – 2023), Jakarta, Indonesia, Organized by Asian Society for Research in Engineering Sciences (ASRES), SPJ Centre for Multi-disciplinary Research (SCMR) Matana University, Jakarta University of Pembangunan Jaya, Jakarta, 15th – 17th December, 2023.
- 22.> Sanjiv Kumar Gupta, Amit Dhawan, **Manish Tiwari**, and Sumit K. Jha "Efficient Approximate 8-Bit Binary Parallel Subtractor Circuit: Design, Analysis, and Application in Negative Image Generation," in proceeding of 9th International Conference on Signal Processing and Communication (ICSC-2023), held at IIIT Noida, India, 21st - 23rd December 2023, DOI: 10.1109/ICSC60394.2023.1044154.
- 23.> K. K. Jha, Sumit Kumar Jha, Hariom Shankar Mishra, Amit Dhawan and **Manish Tiwari**, "Comparative Study of Various Transformation Techniques in Image Fusion," in proceeding of International Conference on Advances in Emerging Trends in Computer Applications (ICAETC-2023), held at BBDITM Lucknow, India, 21st - 22nd December 2023. DOI: 10.1201/9781003606635-72.
- 24.> Piyush Ramteke, Virat Krishna, **Manish Tiwari**, "Verilog HDL Verification and Efficient 2-D FIR Filter implementation using Distributed Arithmetic Algorithm," in proceeding of 7th International Conference Challenges and Opportunities for Innovation in India (COII-2024), held at Ambalika Institute of Management & Technology, Lucknow, 23rd - 24th February 2024.
- 25.> Sindhu Sujata Kandau, Arun Prakash, **Manish Tiwari**, Sarsij Tripathi, Nishu Gupta, Raghavendra Pal, "C-V2X and 5G-V2X: Challenges and Improvement Strategies," in proceeding of 3rd International Conference on Microwave, Antenna and Communication (MAC-2025). DOI: 10.1109/MAC64480.2025.11140108.

Book Chapters Published:

- 1.> Govind Prasad Pandiya, Abhay Vidyarthi, **Manish Tiwari**, Amit Dhawan & R. Maheswar, "Optimal Guaranteed Cost Control of an Uncertain and Shift-Delayed 2-D Discrete FM First Model via Memory State Feedback" Advances in VLSI, Communication, and Signal Processing, in the lecture notes in electrical engineering, Vol. 911, 2022, pp 405–419. DOI: 10.1007/978-981-19-2631-0_36.
- 2.> Akhilesh Kumar Ravat, Amit Dhawan, **Manish Tiwari**, "Preview Control for Discrete Time Systems," Recent Trends in Electronics and Communication Recent Trends in Electronics and Communication, *Lecture Notes in Electrical Engineering*, Vol. 777, 2021, pp. 1157–1176, DOI: 10.1007/978-981-16-2761-3_100.
- 3.> A. K. Ravat, Amit Dhawan, **Manish Tiwari**, "Noise Cancelation using Adaptive Filter," Advances in VLSI, Communication and Signal Processing, *Lecture Notes in Electrical Engineering* (Springer), Vol. 587, 2020, pp. 981-990. DOI: 10.1007/978-981-32-9775-3_87.

Books Published:

- 1.> Digital Principles: Foundation of Circuit Design & Applications, 2/e 2014 (1/e 2005), published by New Age International. ISBN: 978-81-224-3560-3
- 2.> Digital Principles: Switching Theory, 2/e 2007 (1/e 2006), published by New Age International. ISBN: 81-224-2241-1